## REMARKS

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claims 1, 4, 7, 10, 11, 14, 17, 20 and 23 are amended. Claims 1-23 are pending.

Entry of Amendment under 37 C.F.R. § 1.116

The Applicant requests entry of this Rule 116 Response because: the amendments were not earlier presented because the Applicant believed in good faith that the cited references did not disclose the present invention as previously claimed; and the amendment does not significantly alter the scope of the claim and places the application at least into a better form for purposes of appeal.

The Manual of Patent Examining Procedures (M.P.E.P.) sets forth in Section 714.12 that "any amendment that would place the case either in condition for allowance or in better form for appeal may be entered." Moreover, Section 714.13 sets forth that "the Proposed Amendment should be given sufficient consideration to determine whether the claims are in condition for allowance and/or whether the issues on appeal are simplified." The M.P.E.P. further articulates that the reason for any non-entry should be explained expressly in the Advisory Action.

### I. Rejection under 35 U.S.C. § 112

In the Office Action, at page 3, numbered paragraph 4, claims 1-23 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claims 1, 4, 7, 10, 11, 14, 17, 20 and 23 are amended in accordance with the Examiner's comments.

The specification recites that "...the filter 703 is designed to have high-pass filtering characteristics or band-pass filtering characteristics. However, when the filter 703 is positioned in series between the SPP signal generating unit 702 and the subtractor 704, the filter 703 is designed to have low-pass filtering characteristics [emphasis added]." Further, the originally filed claims provide support for the filter 703 being a "high-pass filter." Thus, the specification has been amended to recite that the filter 703 is a high-pass filter, as disclosed by claim 1, for example.

Further, the present specification discusses that the filter 703, which claim 1, for example, recites is a high-pass filter, is designed to have high-pass filtering characteristics, but that when the filter 703 is positioned in series between the SPP signal generating unit 702 and the subtractor 704, the filter 703 is designed to have low-pass filtering characteristics. The present specification does not provide that the filter 703 is a low-pass filter, but that the filter 703 has low-pass filtering characteristics when the filter 703 is connected in series between the SPP signal generating unit 702 and the subtractor 704.

Further, claims 1, 4, 7, 10, 11, 14, 17, 20 and 23 are amended to recite that the high-pass filter is connected in series between an output terminal of the side beam push pull signal generating unit and a ground terminal, as shown in Fig. 7.

Therefore, the Applicants respectfully request withdrawal of the § 112, first paragraph, rejection.

## II. Rejection under 35 U.S.C. § 103

In the Office Action, at page 5, numbered paragraph 6, claims 1-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,787,076 to Deguchi et al. This rejection is respectfully traversed because Deguchi does not suggest:

> a high-pass filter which removes an AC component from the SPP signal such that only DC components of the SPP signal remain; and
>
> a subtractor which generates a tracking error signal by calculating a difference between the MPP signal and the DC components of the SPP signal,
>
> wherein the high-pass filter is connected in series between an output terminal of the side beam push pull signal generating unit and a ground terminal,

as recited in amended independent claims 1 and 11.

The Examiner concedes that Deguchi does not disclose a high-pass filter which removes an AC component from the SPP signal such that only DC components of the SPP signal remain wherein the high-pass filter is connected to the terminal of the side beam push pull signal generating unit to ground. The Examiner takes official notice that providing a low-pass filter in series with a signal output results in the equivalent frequency response as connecting a high-pass filter to ground at the signal output (i.e. removing AC components from a signal and allowing DC components to pass).

In addition, the Examiner alleges that "it would have been an obvious matter of design choice to provide a high-pass filter to ground versus having a low-pass filter in series with the SPP signal since the applicant has not disclosed that a high-pass filter solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a low-pass filter in series." The Examiner has **entirely failed** to provide an apparent reason or motivation to connect a high-pass filter in series between an output terminal of a SPP signal generating unit and a ground terminal.

M.P.E.P. § 2144.04 recites that "[t]he mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. **The prior art must provide a motivation or reason for the worker in the art**, without the benefit of appellant's specification, to make the necessary changes in the reference device [emphasis added]." *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

Merely reciting that "the applicant has not disclosed that a high-pass filter solves any stated problem or is for any particular purpose" is not a motivation, suggestion or apparent reason that would have led one of ordinary skill in the art to incorporate a high-pass filter to ground in the invention of Deguchi. Although the Examiner alleges that the Applicants have not disclosed that a high-pass filter solves any stated problem, the Applicants have disclosed that providing a high-pass filter versus a low-pass filter does solve a stated problem. In particular, at paragraph 0045, the present specification recites that since AC components are removed from the SPP signal, the DPP signal can be stably generated regardless of a disc track pitch.

The Applicants provide a high-pass filter in series between an output terminal of the SPP generating unit and a ground terminal, so that the high-pass filter has both high-pass and low-pass characteristics, which allow for a more stably generated DPP signal, regardless of a disc track pitch. Deguchi discusses only the use of a low-pass filter, which does not provide high-pass filtering characteristics. Thus, there is no indication as to why a high-pass filter would be incorporated into the device of Deguchi, when only a low-pass filter is used or is necessary. The Examiner has failed to cite a motivation to suggest why a **high-pass filter**, in particular, would be incorporated into the device of Deguchi, in series with an output terminal of a SPP signal generating unit and a ground terminal, so that the high-pass filter would have both high-pass and low-pass characteristics.

Merely stating that the applicant has not disclosed that a high-pass filter solves any stated problem or is for any particular purpose **is not an apparent reason or motivation, as is required by M.P.E.P. 2144.04 and KSR International v. Teleflex, to provide a high-pass filter to ground instead of having the low-pass filter of Deguchi**. The Examiner has thus failed to establish a *prima facie* case of obviousness.

Therefore, as the combination of Deguchi and Official Notice does not suggest all the features of amended independent claims 1 and 11, claims 1 and 11 patentably distinguish over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Further, the combination of Deguchi and Official Notice does not suggest "calculating a difference between an MPP signal and an SPP signal whose AC components are removed via a high-pass filter such that only DC components of the SPP signal remain,... wherein the high-pass filter is connected in series between an output terminal of a generator of the SPP signal and a ground terminal," as recited in amended independent claims 4 and 10. Therefore, claims 4 and 10 patentably distinguish over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Also, the combination of Deguchi and Official Notice does not suggest "a high-pass filter which removes AC components from the SPP signal such that only DC components of the SPP signal remain, the AC components being removed before the signal is received by the tracking error signal generating unit;...wherein the high-pass filter is connected in series between an output terminal of a generator of the SPP signal and a ground terminal," as recited in amended independent claim 7. Therefore, claim 7 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

In addition, the combination of Deguchi and Official Notice does not suggest "removing an AC component from the SPP signal via a high-pass filter such that only DC components of the SPP signal remain; and generating a tracking error signal based on a difference between the MPP signal and the DC components of the SPP signal, wherein the high-pass filter is connected in series between an output terminal of a generator of the SPP signal and a ground terminal," as recited in amended independent claims 14 and 17. Therefore, claims 14 and 17 patentably distinguish over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Additionally, the combination of Deguchi and Official Notice does not suggest "a high-pass filter which removes AC components from the SPP signal such that only DC components of the SPP signal remain, the AC components being removed before the signal is received by the tracking error signal generating unit;...wherein the SPP signal is generated based on a difference between one of a third sum signal representing the sum of signals output from the main photodetecting portions which are diagonally disposed with respect to the track in a first direction and a fourth sum signal representing the sum of signals output by the main photodetecting portions diagonally disposed with respect to the track in a second direction normal to the first and a fifth signal output by a first side photodetector and a sixth signal output by a second side photodetector, and wherein the high-pass filter is connected in series between an output terminal of a generator of the SPP signal and a ground terminal," as recited in amended independent claim 20. Therefore, claim 20 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Also, the combination of Deguchi and Official Notice does not suggest "a high-pass AC component remover which removes an AC component from a side beam push pull (SPP) signal such that only DC components of the SPP signal remain,...wherein **the tracking error signal can be stably generated regardless of a disc track pitch**, and wherein the high-pass AC component remover is connected in series between an output terminal of a generator of the SPP signal and a ground terminal," as recited in amended independent claim 23. Therefore, claim 23 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 2, 3, 5, 6, 8, 9, 12, 13, 15, 16, 18, 19, 21 and 22 depend either directly or indirectly from independent claims 1, 4, 7, 11, 14, 17 and 20 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 12 recites that "the main photodetecting portions are positioned at four quadrants of a photodetector in a clockwise direction and the main photodetecting portions on the first side of the track are symmetrically arranged with the main photodetecting portions on the opposing side of the track." Therefore, claims 2, 3, 5, 6, 8, 9, 12, 13, 15, 16, 18, 19, 21 and 22 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

## Conclusion

In accordance with the foregoing, claims 1, 4, 7, 10, 11, 14, 17, 20 and 23 have been amended. Claims 1-23 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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